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EXAMINER

KARIMI, PEGEMAN

ART UNIT	PAPER NUMBER
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2629

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/525,134	Applicant(s) SEMPEL, ADRIANUS	
	Examiner PEGEMAN KARIMI	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-11,14 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5-11, 14, 19-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed on 04/22/2008 has been entered and considered by examiner.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 10, 11, 19 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Karube (U.S. Patent No. 6,456,282).

As to claim 1, Karube discloses a display device (Fig. 3) comprising:

a number of picture elements (pixel array portion 2); and

a display driver device (3) comprising driving transistors (11) to be connected in series with the picture elements (circuit 11 is connected from one side to signal line drive circuit 3 and the other side to the pixel element);

means (12 and 11) for monitoring output voltages at output nodes (voltage at node d at the output of element 11 in Fig. 7) of the display driver device (col. 5, lines 41-46, and col. 6, lines 51-59);

Art Unit: 2629

a feedback mechanism (Feedback mechanism of Fig. 11) configured to operate in response to the output voltages (feedback is in response to generate the output voltage at the output of element 11) to control a reference voltage of the display driver device (the reference voltage of supply line S at node e) and to maintain substantially constant a voltage value between a supply node (supply node e) and the output nodes (output node of a, where the voltage V_{in} is outputted from a video signal input voltage), (As can be seen in Fig. 12, when the feedback switch 12 turns off along with switch 10, the voltage value between nodes e and a becomes constant because the two voltage values in stable period become the same); and

means (12 and 11) for detecting one or more open outputs (one open output = switch SW10) at one or more of the output nodes of the display driver device (SW10 is in off position while switch SW13 at the output node is in On position); and

means (12 and 11) for inhibiting the feedback mechanism from responding to the output voltages at the one or more output nodes (feedback mechanism of switch 12 between the nodes b and c, when the output voltages at the output node e does not change and is at 3V while the switch 12 is ON, so the feedback mechanism is not functional) having the open outputs (the one output SW10 is in ON position) upon detection by the detection means (detected by the switch control circuit 12) of the one or more open outputs (when the SW 10 is ON the SW 12 turns ON and the feedback between the nodes c and b is inhibited), (col. 5, lines 42-45).

As to claim 10, this claim differs from claim 1 only on that the limitation “the display driver device comprising a differential amplifier for detecting an open output of the display driver device for a picture element” is additionally recited. Karube teaches the display driver device (3) comprising a detector (12) including a differential amplifier (OP1) for detecting an open output (SW10 is in off position) of the display driver device for a picture element (S), (in sampling period switch control detects switches 10-13 and sets switches 11 and 13 to open and switches 10 and 12 are closed and the voltage of the input signal is fed to OP1 and since switches 11 and 13 are closed the output voltage is fed-back to the inverting input terminal), (col. 14, lines 44-47).

As to claims 2 and 11, Karube teaches means (12) for signaling (col. 6, lines 51-53) when an output voltage reaches a threshold voltage (col. 8, lines 21-25 and lines 36-43).

As to claims 19 and 20, Karube teaches the means (12 and 11) for inhibiting (switching the switch SW12 in an ON position) includes a plurality of switches (SW10-SW13) connected between the supply node (node e) and the output nodes (the output nodes are includes node a and c (when the SW11 is on)), wherein one or more of the switches are opened (Switch SW12 is in an ON position) upon detection of the one or more open outputs (when switch SW10 is ON the Switch SW12 is ON as well and the voltages do not change in the circuit).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-7, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karube in view of Sakamoto (U.S. Patent No. 5,594,463).

As to claims 5 and 14, Karube teaches the feedback mechanism (feedback mechanism of Fig. 11). Karube does not mention signaling a difference between an output voltage and a reference voltage. Sakamoto teaches a control circuit (source voltage controller) for signaling (Display message, S118, Fig. 7) a difference between (difference between = estimated voltage drop of ΔV) an output voltage (output voltage = V_f) of the display driver device for a picture element (pixels) and the reference voltage (V_d) being below a threshold voltage (V_d , S114), (A voltage drop is estimated in Step 110 and a voltage drop V_f is calculated and a minimum necessary driving voltage V_d is estimated, which is interpreted as a reference voltage value and based on comparing to a V_d voltage if the value is less than V_d a signal of step 118 is displayed). Therefore it would have been obvious to one of ordinary skilled in the art at the time the invention was made to have added the signaling a difference between an output voltage and a reference voltage of Sakamoto to the feedback mechanism of Karube because to provide a driving circuit for a display apparatus

Art Unit: 2629

and a method of driving the display apparatus, which can obtain an appropriate lighting condition of the EL element after it is used for a long time, and, at the same time, which can save the consumption energy even in the initial condition of the usage of the EL element.

As to claim 6, Karube teaches the means (12 and 11) for detecting the open output (SW10 is in off position) are configured to perform the detecting after the signaling (At the sampling period, load drive circuit detects switches 10 and 12 are on and switches 11 and 13 are off. It then enter writing and stable periods where it turns switches 10 and 12 off and switches 11 and 13 on and adjusts the voltage at node e).

As to claim 7, Karube teaches the means (12 and 11) for detecting includes a differential amplifier (Fig. 11, OP1; col. 13, lines 63-65).

6. Claims 8, 9, 21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karube in view of Miyazawa (U.S. Pub. No. 2003/0160247).

As to claim 9, Karube does not teach the luminescent element. Miyazawa (Fig. 1) teaches the picture elements include a luminescent element (3) having a luminescence determined by a first current ([0038], lines 9-17). therefore it would have been obvious to one of ordinary skilled in the art at the time the invention was made to have added the luminescent element of Miyazawa in Karube's

Art Unit: 2629

display device because electroluminescent elements can operate at low voltage and have an angle-dependent visibility lower than that of liquid crystal elements ([0015]).

As to claim 8, Karube teaches the display driver device (3) comprises:
the feedback mechanism is configured for keeping substantially constant a difference between an output voltage of the display driver device (output voltage is at the node between SW13 and OP1, wherein when the SW13 is closed the node voltage value equals to voltage value of node e) for a picture element and the reference voltage (reference voltage is equal to voltage value of node e), (since the voltage value of reference voltage and output voltage are equal the difference is zero, which is a substantial constant value).

Karube does not teach current sources and each current sources including one of the transistors, Miyazawa teaches the picture elements (23) are configured to be driven by current sources ([0038], lines 9-15).

Miyazawa also teaches each current sources including one of the transistors (the current is transmitted from the corresponding common power supply line 133, which is connected to one of the transistors 24), (Fig. 1).

As to claim 21, Karube teaches a display driver, comprising:
means (11 and 12) for monitoring output voltages at the output nodes (voltage of node e), (switch control circuit 12 and load drive circuit 11 control the voltage by switching the switches ON and OFF), (col. 5, lines 42-45);

Art Unit: 2629

a feedback mechanism (feedback mechanism of Fig. 11) configured to operate in response to the output voltages (the switches in the feedback mechanism of Fig. 11 operate in response to the output voltages created at node e) to control a reference voltage of the display driver (the reference voltage of supply line S at node e) and to maintain substantially constant a voltage value between a supply node (supply node e) and the output nodes (output node of a and c, wherein the voltage V_{in} is outputted from a video signal input voltage); and

means (12 and 11) for inhibiting the feedback mechanism from responding to the output voltages at one or more output nodes (feedback mechanism of switch SW12 between the nodes b and c, when the output voltages at the output node e does not change and is at 3V while the switch SW12 is ON, so the feedback mechanism is not functional) which have open outputs (the one output SW10 is in OFF position).

Karube does not teach current sources for supplying current to pixels

Miyazawa teaches a plurality of current sources (133) for supplying current to pixels (AR) of a display device (Fig. 1), each current source being connected to an output node of the display driver (the current line 133 is connected to the output node of pixel AR, Fig. 1);

As to claim 23, Karube teaches means (11 and 12) for detecting one or more open outputs at one or more of the output nodes (detecting the one output of SW10, which is open , and

Art Unit: 2629

wherein the means (11 and 12) for inhibiting includes a plurality of switches (SW10-SW13) connected between the supply node and the output nodes (SW10-SW13 is connected between the supply node e and output nodes a and c), wherein one or more of the switches are opened upon detection of the one or more open outputs (SW10 is in OFF position while switch SW13 at the output node is in ON position).

7. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karube in view of Miyazawa, and further in view of Katoh (U.S. Patent No. 5,926,156).

As to claim 22, Karube and Miyazawa do not teach the means for inhibiting comprises a plurality of fuses. Katoh teaches the control signals of switch circuits are generated by a plurality of Fuses and resistance element). Therefore it would have been obvious to one of ordinary skilled in the art at the time the invention was made to have added the Fuses and resistances of Katoh to the switch control circuit and load drive circuit of the data driver, 3, of Karube as modified by Miyazawa because (if there is a fault in the signal of the output circuits the fuses turn off (safety element), (col. 28, lines 56-62).

Response to Arguments

8. Applicant's arguments filed 06/11/2008 have been fully considered but they are not persuasive.

Art Unit: 2629

9. Applicant's arguments with respect to claim 22 has been considered but is moot in view of the new ground(s) of rejection. The new ground of rejection of Katoh (U.S. Patent No. 5,926,156) has been added for this rejection.

The applicant's use of the term "means" in claims 1 and 10 is very broad, and can be interpreted as the elements 11 and 12 in the art reference of Karube.

The limitation of Inhibiting the feedback mechanism should be explained in more detail, since the current limitation is broad.

Applicant argues that Karube does not disclose any display device that includes the features of "a feedback mechanism configured to operate in response to the output voltages to control a reference voltage of the display driver device and to maintain substantially constant a voltage value between a supply node and the output nodes; means for detecting one or more open outputs at one or more of the output nodes of the display driver device; and means for inhibiting the feedback mechanism from responding to the output voltages at the one or more output nodes having the open outputs upon detection by the detecting means of the one or more open outputs."

Karube teaches the feedback mechanism of Fig. 11 operates in response to generate the output voltages at the node e of element 11. Also the switch control circuit and load drive circuit control the switches SW10-SW13, wherein it detects which switches are ON and which switches should be OFF to generate output voltages at the output mode

Karube also mentions Switch control circuit and load drive circuit control the switches that the feedback system is not functional while in the sampling

Art Unit: 2629

period. In this period the switches SW10 and SW12 are ON and the voltage at the node e is at 3 volts.

Claim 10 differs from claim 1 only on that the limitation “the display driver device comprising a differential amplifier for detecting an open output of the display driver device for a picture element” is additionally recited. Karube teaches the display driver device (3) comprising a detector (12) including a differential amplifier (OP1) for detecting an open output (SW10 is in off position) of the display driver device for a picture element (S).

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 2629

Inquiry

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PEGEMAN KARIMI whose telephone number is (571)270-1712 and direct fax number is (571)270-2712. The examiner can normally be reached on Monday-Thursday 8:00am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen can be reached on (571) 272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Pegeman Karimi/
Examiner, Art Unit 2629
August 12, 2008

/Chanh Nguyen/
Supervisory Patent Examiner, Art
Unit 2629